INCH-POUND

MIL-PRF-27/320C
28 April 2008
SUPERSEDING
MIL-PRF-27/320B
19 January 1989

PERFORMANCE SPECIFICATION SHEET

TRANSFORMERS, POWER, 160 VOLTAMPERES, 60 HZ

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the transformer described herein shall consist of this document and the latest issue of specification MIL-PRF-27.

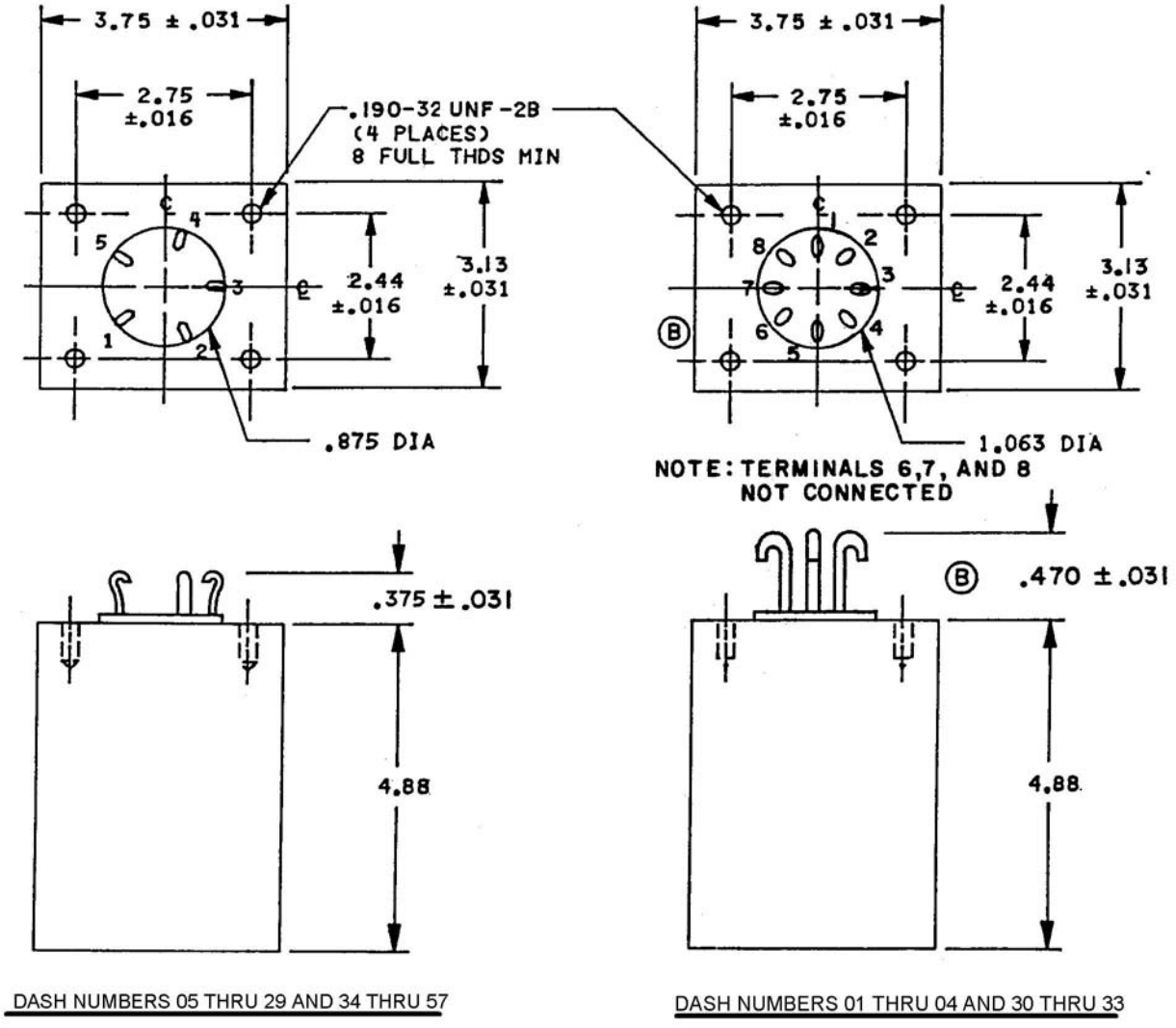
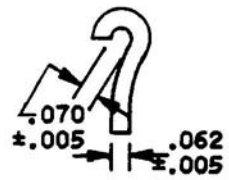
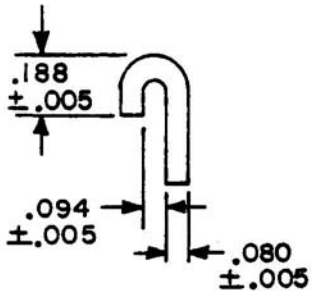


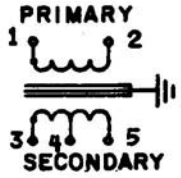
FIGURE 1. Dimensions and configuration.



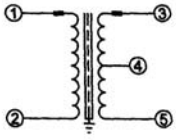
DASH NUMBER 05 THRU 28 AND 33 THRU 56



DASH NUMBERS 01 THRU 04 AND 29 THRU 32



CIRCUIT DIAGRAM "A"



CIRCUIT DIAGRAM "B"

INCHES	mm	INCHES	mm
.005	0.13	0.375	9.52
.016	0.41	0.470	11.94
.031	0.79	0.875	22.22
.062	1.57	1.063	27.00
.070	1.78	2.44	62.0
.080	2.03	2.75	69.8
.094	2.39	3.13	79.5
.188	4.78	3.75	95.2
.190	4.83	4.88	123.9

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Marking shall be on the sides of the case.
4. Unless otherwise specified, tolerance is ±.063 (1.60 mm).
5. Electrical values shall be marked as specified in table I.

FIGURE 1. Dimensions and configurations – Continued.

REQUIREMENTS: (When numbers in parentheses, i.e., (1-2) are used, they indicate the winding and the extreme terminals of the winding.)

Electrical ratings:

Primary voltage (1-2): 115 volts ac, 50 to 60 hertz.

Primary dc resistance: 1.6 ohms ±25 percent.

Secondary voltage (3-5): See table I.

Volt-ampere rating: 160 volt-amperes.

Working voltage (1-2): 535 volts peak.

Design and construction:

Dimensions and configuration: See figure 1.

Duty cycle: Continuous.

Case: Metal enclosed.

Material: Steel.

Terminals: Solderable terminals.

Dash numbers	Terminal type	Height (inches)	Diameter (inches)
01 through 04	hook	0.470 ±.031	0.080 ±.005
05 through 29	hook	0.375 ±.031	0.062 ±.005
30 through 33	hook	0.470 ±.031	0.080 ±.005
34 through 56	hook	0.375 ±.031	0.062 ±.005

Weight: 8.2 pounds, maximum.

Operating temperature range: -55°C to +130°C.

Altitude: 10,000 feet.

Terminal strength: MIL-STD-202, method 211, test condition A, 2.0 pounds.

Dielectric withstanding voltage (each winding) (at sea level): 1,500 volts rms.

Electrical characteristics:

Rated load: With 115 volts ac and 60 Hz across (1-2), and rated current in secondary, the voltage across (3-5) shall be as specified in table I.

Regulation: $\frac{\text{Voltage (no load) - Voltage (rated load)}}{\text{Voltage (rated load)}} \times 100$

Shall not exceed 10 percent.

Polarity: Additive with terminals 2 and 3 connected.

Temperature rise: +35°C with 115 volts ac, 60 hertz across (1-2) at an ambient temperature of +95°C, full load terminals (3-5).

Marking location: See figure 1.

Part or identifying number (PIN): M27/320-(dash number from table I).

TABLE I. Electrical ratings.

Dash number	Secondary (3-5)			
	Voltage (volts) ±3 percent	Current 1/ (amperes)	DC resistance (ohms) ±25 percent	Circuit diagram
01	8.0	20.00	.014	A
02	10.0	16.00	.018	A
03	12.6	12.70	.038	A
04	14.0	11.40	.042	A
05	16.0	10.00	.046	A
06	18.0	8.89	.060	A
07	20.0	8.00	.070	A
08	22.0	7.27	.092	A
09	25.0	6.40	0.110	A
10	28.0	5.72	0.150	A
11	31.0	5.17	0.166	A
12	35.0	4.57	0.240	A
13	39.0	4.10	0.270	A
14	43.0	3.70	0.382	A
15	48.0	3.33	0.405	A
16	55.0	2.91	0.600	A
17	63.0	2.52	0.640	A
18	70.0	2.280	0.93	A
19	80.0	2.000	1.06	A
20	90.0	1.780	1.49	A
21	100	1.600	1.69	A
22	110	1.450	2.30	A
23	123	1.300	2.57	A
24	138	1.150	3.60	A
25	157	1.020	4.10	A
26	175	0.914	5.82	A
27	200	0.800	6.70	A
28	220	0.728	8.95	A

See footnote at end of table.

TABLE I. Electrical ratings – Continued.

Dash number	Secondary (3-5)			
	Voltage (volts) ±3 percent	Current 1/ (amperes)	DC resistance (ohms) ±25 percent	Circuit diagram
29	40.0	4.10	0.277	B
30	8.0	20.00	.014	B
31	10.0	16.00	.018	B
32	12.6	12.70	.038	B
33	14.0	11.40	.042	B
34	16.0	10.00	.046	B
35	18.0	8.89	.060	B
36	20.0	8.00	.070	B
37	22.0	7.27	.092	B
38	25.0	6.40	0.110	B
39	28.0	5.72	0.150	B
40	31.0	5.17	0.166	B
41	35.0	4.57	0.240	B
42	39.0	4.10	0.270	B
43	43.0	3.70	0.382	B
44	48.0	3.33	0.405	B
45	55.0	2.91	0.600	B
46	63.0	2.52	0.640	B
47	70.0	2.280	0.93	B
48	80.0	2.000	1.06	B
49	90.0	1.780	1.49	B
50	100	1.600	1.69	B
51	110	1.450	2.30	B
52	123	1.300	2.57	B
53	138	1.150	3.60	B
54	157	1.020	4.10	B
55	175	0.914	5.82	B
56	200	0.800	6.70	B
57	220	0.728	8.95	B

1/ For 50 Hz operation, reduce secondary current by 10 percent.

VERIFICATION:

Extent of qualification:

Qualification testing and approval to M27/312-26 or M27/316-30 or M27/322-24 shall be sufficient to grant qualification approval to MIL-PRF-27/312 through MIL-PRF-27/322, inclusive, all parts.

Qualification test and approval to M27/320-28 shall be sufficient to grant qualification approval M27/320-01 through M27/320-56.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents.

MIL-PRF-27
MIL-STD-202

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Review activities:
Army - CR4, MI
Navy - AS, MC, OS
Air Force - 19, 99

Preparing activity:
DLA - CC

(Project 5950-2008-059)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.